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ABSTRACT

The Task Force on Qualitative and Quantitative Performance and Achievement in Higher Education considered the nature of evaluation as it might appropriately be defined and practiced, and the specific qualitative and quantitative aspects of those evaluation practices. The report opens with a discussion of 12 recommendations, 5 of which focus on the scope and purpose of evaluation, and 7 of which consider modes of evaluation. Section II deals with the orientation of the Task Force and a discussion of the analytical evaluation model that was developed. Section III discusses analyses of evaluation and educational quality as presented in the literature. Section IV deals with decisionmaking in Connecticut public higher education. Task Force members, a description of the Task Force's mission, a discussion of the creation of the Task Forces, and of higher education in Connecticut, a bibliography, and the WICHE data elements are included in the appendix. (AF)

ED048833

QUALITATIVE AND QUANTITATIVE
PERFORMANCE AND ACHIEVEMENT
IN HIGHER EDUCATION

Report of
Task Force IV
to the
Connecticut Commission for Higher Education

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January 1971

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The Connecticut Commission for Higher Education wishes to express its gratitude to the Task Force members who prepared this report. In June 1970 the Commission established four Task Forces with broad representation from the educational, business and civic communities of the State. Each Task Force was asked to consider a different aspect of higher education. Their separate reports express the conclusions and recommendations of Task Force members exclusively. They are not necessarily the views of the Commission for Higher Education.

WESLEYAN UNIVERSITY
MIDDLETOWN CONNECTICUT 06457

Office of the Chancellor

January 18, 1971

ED048833

Mr. Donald H. McGannon, Chairman
Commission for Higher Education
340 Capitol Avenue
Hartford, Connecticut

Dear Mr. McGannon:

The members of Task Force IV submit herewith their Report, entitled "Qualitative and Quantitative Performance and Achievement in Higher Education."

The Task Force has concerned itself primarily with the nature of evaluation, as it might appropriately be defined and practiced, and in the specific qualitative and quantitative aspects of those evaluation practices. In dealing with quantitative aspects of evaluation, the members of the Task Force agreed relatively early in their study that numerical measures reflecting head counts, student-faculty ratios, numbers of graduates, and the like, are by themselves only of limited value in determining an educational institution's "quality" or "excellence." It was felt that these numbers alone give little measure of the quality of the "products" of the educational process. One of the central concerns, then, of the Task Force has been a consideration of the criteria used by institutions of higher education to measure individual status, performance and development after leaving colleges or universities. The Task Force offers specific recommendations dealing with this and other points within the range of its study.

The Task Force has met seven times since July 1970. Although the group has worked diligently and responsibly, we have not accomplished everything that we set out to do. In particular, we have not fully investigated modes of evaluation which have developed elsewhere; but we have gone far enough to recommend that evaluative procedures under way in other states can profitably be exploited by us in Connecticut. Moreover, we have not actually performed an evaluation of any institutions, although we are confident that the staff of the Commission can carry through a first approximation of an evaluation along the lines outlined in this report.

We have enjoyed the opportunity to serve on the Task Force and are grateful for the help and cooperation of the Commission's staff and consultants.

Sincerely yours,

R.A. Rosenbaum

Robert A. Rosenbaum

FOREWORD

This is the fourth of four Task Force reports on higher education in Connecticut. The reports are entitled:

- I. NEEDS: SOCIO-ECONOMIC, MANPOWER, REGIONAL
- II. FUNCTION, SCOPE AND STRUCTURE
- III. FINANCING
- IV. QUALITATIVE AND QUANTITATIVE PERFORMANCE AND ACHIEVEMENT

Each Task Force report contains a section that describes the development of the present state system of higher education. In the report of Task Force IV, this background material appears in the Appendix beginning on page 44.

The charges to the four Task Forces from the Commission for Higher Education suggested subjects for possible consideration. They did not, however, limit the scope of the discussions. Task Force members were encouraged to make recommendations for any actions they felt would strengthen Connecticut's system of higher education.

A definition of Task Force IV's charge is in the Appendix on page 41. The complete report begins on page one.

TASK FORCE IV MEMBERS

Task Force IV members included:

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I. RECOMMENDATIONS

Mindful that evaluation is a subtle and complex matter, the Task Force has tried to avoid total reliance on quantitative measures which might miss central features of higher education. Nevertheless, such terms as "performance," "value added," and the like may be misinterpreted as suggesting a simplistic approach to evaluation, perhaps doing no more than comparing the average annual income of the alumni of one institution with that of another. The Task Force proposes that evaluation should be carried far beyond such indices, so that the contribution of higher education in Connecticut to the quality of life can somehow be assessed. Such an assessment is a formidable undertaking, but an evaluation which does not attempt it is doomed in advance to failure.

THE SCOPE AND PURPOSE OF EVALUATION

A first requirement is a statement of institutional goals, for evaluation can be carried out only in the context of such goals:

RECOMMENDATION 1.

Each institution within the state system of higher education should define its goals and functions in such terms as to make it possible to check whether the goals are being achieved, should reconsider its goals and functions periodically, and should change them as appropriate. The Commission for Higher Education should do likewise for the state system of higher education as a whole.

The system of accreditation as currently practiced provides some rough evaluative norms; but this process is inadequate to the need for

more refined and extensive evaluations, because, although specialized accreditation focusing on program evaluation provides a qualitative inspection by peers, it is, by definition, narrow in scope and occurs infrequently in most cases:

RECOMMENDATION 2.

Each institutional unit of the state system of higher education should periodically evaluate, in the light of the goals and functions mentioned in Recommendation 1, its inputs, its processes, and its performance, with evaluation of performance being of highest importance. Such an evaluation might take the form of an institutional self-study involving faculty, administration, students, former students, board members and appropriate outsiders.

Evaluation is required for the system as a whole, as well as for each institution within the system:

RECOMMENDATION 3.

An independent organization, such as a Task Force created by the Commission for Higher Education, should periodically evaluate the state system of higher education as a whole. Specific provision for the cost of this evaluation should be made by allocating a portion of the Commission for Higher Education budget or by special request to the legislature in years of extraordinary activity.

Although a total evaluation of higher education involves assessment of performance in all areas--teaching and learning, research, and public service--the nature of higher education gives priority to the first of

these areas, since not everything can be done at once:

RECOMMENDATION 4.

Initial attention in the process of evaluation should be focused on the outcomes of the teaching-learning process.

Affective behavior, which embraces human interests, attitudes, appreciations, values and emotional sets or biases, has its own merit within the total experience of higher education:

RECOMMENDATION 5.

While the principal concern for higher education is the development of advanced cognitive (thinking) behavior in individuals, there is a need for higher education and individual institutions to identify and emphasize the development of affective (emotional) behaviors.

MODES OF EVALUATION

As was noted in the letter of transmittal, the theory and practice of evaluation as developed elsewhere can be useful here in Connecticut:

RECOMMENDATION 6.

The Commission for Higher Education should study on a continuing basis developing theory and practice in the evaluation of higher education. A special Task Force should be created by the Commission for Higher Education, from time to time, to make suitable recommendations based on the studies.

Higher education is centrally concerned with what happens to individuals after leaving the institutions; yet little information exists by which institutions may evaluate their effectiveness in terms of the post-graduate performances of students:

RECOMMENDATION 7.*

The Commission for Higher Education, working with each institution of higher education and with the State Department of Education, should develop longitudinal studies (i.e., studies over a time span) which will measure the outcomes of higher education in terms of the performance of individuals after leaving college.

*The Task Force, while recognizing this recommendation as being difficult to implement, considers it to be the most important of all its recommendations.

Evaluation of the system of higher education should also pay attention to those qualified persons whom the system does not serve, or does not serve fully:

RECOMMENDATION 8.

The Commission for Higher Education should examine the potential student population in terms of applicants who are qualified and either do not enroll or who enroll and then do not complete a program. Further, the Commission for Higher Education should make recommendations regarding the educational process for these students. As broader and more sophisticated measures of student potential for higher education are devised, they should be used by institutions in the admissions process to recognize special affective strengths and unique talents of individuals.

The "consumers" of education can offer comments of use in the improvement of instruction:

RECOMMENDATION 9.

Evaluations of courses, faculty, and general campus atmosphere by students and former students should be widely and consistently used by faculty and administration for the improvement of the teaching-learning process.

The legislature needs data to understand and analyze budget requests:

RECOMMENDATION 10.

In justifying budget requests made to the state legislature, the Commission for Higher Education should coordinate efforts of the separate institutions to develop, agree upon, and report realistic indices of value produced, including those which measure "value added" to the population being served.

In addition to the materials collected by institutions of the state system, there will be other materials useful for evaluation. Responsibility for collection of such materials should be assigned to the Commission for Higher Education:

RECOMMENDATION 11.

The Commission for Higher Education should have the comprehensive responsibility for developing from sources external to the public system files of pertinent data which will be useful in the measurement of value produced in higher education in Connecticut. Other state and federal agencies, particularly the State Department of Education, can serve as important sources of the information which is necessary to the evaluation process.

To compile the needed files, adequate computer capability is required:

RECOMMENDATION 12.

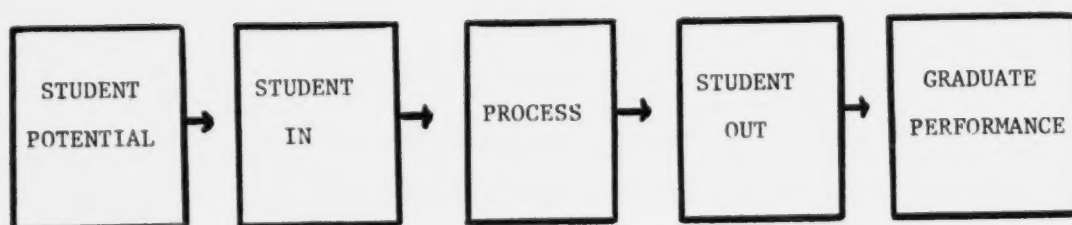
Each collegiate institution in Connecticut must be provided with the computer capacity necessary to develop and to maintain master data files which will provide information for decision-making at the campus levels. As the higher education coordinating agency, the Commission for Higher Education must work with the campuses so that comparability of information supplied by the institutions is achieved by common definitions of the data elements stored.

II. THE ORIENTATION OF TASK FORCE IV

Since there has been a severely limited amount of time for the examination of the complex issue of evaluation, the members of Task Force IV decided at the outset to consider evaluation initially in terms of the teaching-learning phase of higher education, and agreed that the development of an analytical model would be useful. The model which evolved is two-dimensional: from left to right one traces the population from pre-college, through college, to post-college; from top to bottom one moves from the most naive approximation, based on simple numerical statistics, to the most sophisticated essay, designed to attend to qualitative considerations.

The first row of the model (representing the roughest approximation) is shown in the following schema, after which are set out the rationale and an explanation of the terms:

ZERO CONCEPT MODEL

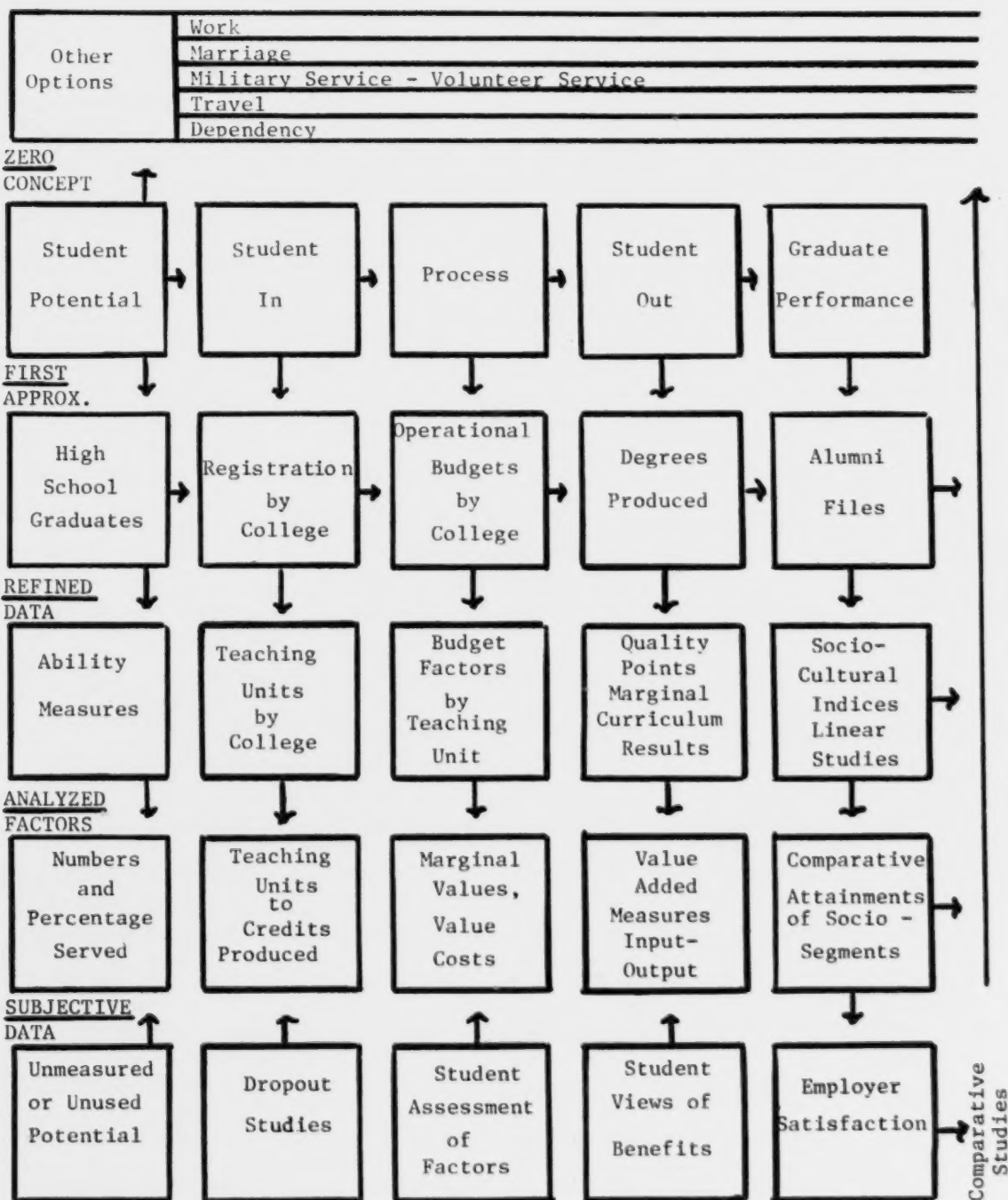


The material for the five aspects of this approximation is quantitative in form:

1. "Student Potential" - The size of the pre-college population and the distribution of measurable abilities within identifiable segments of this group. Measurable abilities shall include new measures of students' unique talents which differ from the common aptitude and achievement scores which are presently weighted excessively in admission procedures.
2. "Student In" - The characteristics of those who enter college: measurable abilities and demographic statistics.
3. "Process" - A statistical analysis of the process of formal education: size of faculty, administration, and staff; distribution by educational background, age, professional experience; teaching loads; class size; size and nature of facilities (libraries, laboratories, classrooms, etc.); allocations of resources for general educational support (psychological services, cultural events, etc.).
4. "Student Out" - The characteristics of those who leave college through graduation or otherwise: unit costs per academic credit earned, degree granted, and the like; attrition rates; post-collegiate plans. Specifically, "value added" as measured by the development from "student in" to student out", as distinct from general maturation which might occur without college.
5. "Graduate Performance" - Characteristics of individuals five, ten or more years after leaving college; differences between graduates and non-graduates, including in the latter group those who did not enter college.

The entire model developed by the Task Force is displayed in the following schema:

EVALUATION MODEL



In terms of this model, the goal of an evaluative procedure is to approach as closely as possible to the most refined approximation: the bottom row of the schema. This does not mean that quantitative measures are to be ignored; indeed, it is expected that imaginative efforts will result in the evolution of numerical indices having good correlation with those qualitative characteristics of successful education. Thus, the members of the Task Force look to a synthesis of the implicit qualitative values of higher education with the explicit quantitative measures of those values. But under no circumstances should the relative ease of amassing statistical data hide the importance of probing for the fundamental, sometimes tenuous, often elusive, qualities of fruitful higher education.

The tension between the quantitative and the qualitative was only one of the possible dichotomies that the Task Force considered. Should evaluation of higher education in Connecticut be "absolute" or "relative"? That is, should some ideal system be imagined, and the existing system compared with it, or should the current situation here be measured against existing situations in other states, or against the "system" of private higher education? Or should one institution of the Connecticut system be compared with another? Or should comparisons be made on the basis of changes over time?

In terms of an ideal, what are the roles of a traditional, conservative model (e.g., the norm for the baccalaureate degree is an unbroken period of four years of full-time attendance at college) and of a novel, radical model (e.g., the system of higher education should provide "continuing education" intermittently over many years to enrich the lives of those Connecticut citizens who wish to avail themselves of the opportunity)? Are there substantial

educational needs which are not being met by a traditional model? Can they be met (should they be met) through the adoption of new modes?

It is clear that the Task Force has not even asked all the questions necessary to describe an evaluative process, much less engaged in performing a substantive evaluation. The members of the Task Force believe that, if the twelve recommendations are implemented, the necessary questions, will, in due course, be formulated and answered, and Connecticut's system of higher education will be helped to ever increasing effectiveness.

III. ANALYSIS OF EVALUATION AND EDUCATIONAL QUALITY

Over the past decade, much work has been done at all levels of education to determine the variables involved in evaluation practices in and out of classrooms and in various institutions.¹ As one editor has described the present state of evaluation theory, "the field may be progressing beyond the state of creating grand plans."²

Evaluation theory has still not resolved the question of what evaluation is, but by all definitions, evaluation involves human judgment. The teaching-learning process is evaluated or judged periodically by professors, administrators, students, and legislators trying to ascertain whether or not students have attained specified objectives. Institutions are judged both by the public and by educators. Each of these constituencies - the educators and the public - holds higher education to account for the achievement of stated institutional goals. State legislators, who possess the delegated power of the people, are requiring action "to meet the insistent...demand for a greater means of educational productivity."³

Evaluation is associated with decision-making settings. The kinds of judgments made about higher education are based on different types of data depending on who is judging. One evaluation theorist has stated:

Evaluation requires judgment. Decision-making requires judgment. Both are judgmental in themselves but also depend on judgments previously made. A school and a curriculum are where they are because of judgments from within or from without. Judgments are made early, and late, and in between times. To understand what a school is doing requires an understanding of what a school is expected to do.⁴

Educational goals, statements of mission, objectives, standards or value-commitments are drawn up to explain the purposes of a given institution. Such

statements reflect the efforts of faculties and administrations to answer society's need for information, and educators should continue to reflect upon their goals and treat them as "fallible data."⁵ Stated goals must be continually evaluated, for they, too, are based upon human judgments, and are consequently not totally free from error.

Some further interpretations of the term "evaluation" applied within decision-making settings can be seen in the following thoughts of Dr. Ewald B. Nyquist:

Evaluation also means cost effectiveness analysis designed to measure the extent to which resources allocated to a specific objective under each of several alternatives actually contribute to accomplishing that objective. Finally, evaluation implies precise program goals and educational objectives stated in behavioral terms and measurable operational terms. Evaluation techniques can be both objective and subjective in education, for not everything can be scientifically determined.⁶

Dr. Nyquist interprets the process of evaluation as mainly an information-seeking activity. He implies that an evaluator, who is also a decision-maker, must become a more public evaluator of his own decisions: "Accountability means...the continuous willingness to evaluate education, to explain and interpret the results with all candor and divulge the results to the public or constituencies that need to know them, and to be personally and organizationally responsible for the weaknesses as well as the strengths revealed."⁷

The Center for the Study of Evaluation at the University of California, Los Angeles, takes a somewhat different approach:

Evaluation is the process of ascertaining the decision areas of concern, selecting appropriate information and collecting and analyzing information in order to report summary data useful to decision-makers in selecting among alternatives.⁸

Here "the decision-maker, and not the evaluator, determines the nature of the domain to be examined."⁹ The evaluator, however, is charged with the task of "pointing out inconsistencies, potential difficulties, or additional data that might modify the decision-maker's views on the relevance of certain concerns."¹⁰ The Center's definition of "evaluation" implies a complete divorcing of evaluation from the decision-making process. A "decision-maker" is defined to be "an explicit contractor of evaluation services as well as a potential but only implicit decision-maker or group."¹¹ The decision-makers, it seems, use the information of evaluators, and not vice-versa.

The Center is also interested in the "kinds of educational decisions [which] require evaluation information,"¹² and furnishes the following list:

1. Systems assessment - evaluations necessary in providing information for decisions about the state of the system.
2. Program planning - evaluations which take place prior to the implementation of the program.
3. Program implementation - evaluations necessary in providing information relative to the extent to which a program has been introduced in the manner in which it was intended and to the group for which it was intended.
4. Program improvement - evaluations necessary during the course of a program about the manner in which the program is functioning, enroute objectives are being achieved, and what unanticipated outcomes are being produced.
5. Program certification - evaluations necessary in providing information that might be used by decision-makers in making judgments about the worth of the program and its potential generalizability to other related situations.¹³

This classification system is also used by the Center for listing decision-making priorities and for evaluating educational systems and

instructional programs. The Center advocates that "judgment data enter into decision processes as inputs, not as outputs."¹⁴ The Center for the Study of Evaluation thus distinguishes two distinct types of individuals: decision-makers and evaluators. Evaluators are hand-maidens of decision-makers. Wise policy will not be made unless evaluators inform decision-makers about the range of the options in given decision settings.

Exactly what the word "evaluation" means, then, remains a problem. At the Center for the Study of Evaluation, it is defined so as to cover both instructional and institutional settings. Other definitions include one or more of the following: (1) measurement and testing, (2) statements of congruence between performance and objectives, or (3) professional judgments.¹⁵ Dr. Nyquist's broad definition certainly seems to include all of these three categories. The first definition presented in this paper, i.e., evaluation is the deciding about the worth of something qualitatively or quantitatively, assumes a close relationship with decision-making. In fact, the two processes, "evaluating" and "deciding" may be so intrinsically related that the semantic difference between them is negligible.

Of much more interest, for educational purposes, however, is who is deciding what, according to what kinds of information, based upon what types of needs of society, and why. A coherent, meaningful, generalizable definition of evaluation might be a help in answering these vital questions so as to satisfy better all the constituencies now clamoring for accountability within and without higher education in the 70's. In dealing with the problem of qualitative areas of concern in evaluation, educators need to describe and measure accurately the "output" of higher education.

One approach uses the concept of "value added." William

W. Turnbull, in his article, "Dimensions of Quality in Higher Education," argues that the "value added" idea would help in explaining the significance of college work or degrees. He summarizes by saying:

...A more defensible index of institutional quality would be the extent of learning that took place during the years of a student's enrollment: the criterion of student growth or "value added." This criterion would recognize the institution's effectiveness as an agent of change rather than of either astute selection or discriminating selection.¹⁶

In terms of educational "output" by institutions of higher education, how does the "value added" concept apply? Student growth within institutions is now measured solely by credit hours and degrees awarded. These measures are so uniform and inclusive that they do not accurately reflect the obvious differences in value received from courses passed by different individuals.

Institutions are not able currently to measure value input as carefully and meaningfully as they would like also. In a recent report entitled Righting the Balance, the Commission on Tests of the College Entrance Examination Board, after a three year study, found:

...The current tests, combined with high school grades, permit colleges to predict which students will after traditional instruction have their study rewarded with relatively high grades. They do not, however, help colleges prescribe educational experiences that will modify that prediction, nor do they delineate traits - cognitive or affective - other than the classic and global ones of verbal and mathematical aptitude that might be exploited by the students and the colleges.¹⁷

Thus the Commission on Tests suggests that the College Entrance Examinations be broadened so as to assess more precisely the variety of skills and special talents entering students may already possess, in addition to verbal and mathematical abilities.

According to Arthur M. Cohen in his book, Dateline '79: Heretical Concepts for the Community College, "learning is now defined as the changed capability for, or tendency toward, acting in particular ways."¹⁸ With this definition of learning in mind, institutions will be in a position to measure their "defined outcomes," and the colleges will focus on "the specific ends toward which all instruction is designed to lead."¹⁹

The "value added" concept might enable institutions to demonstrate more effectively to the public the true worth of their varied educational experiences. By revealing with specific "value added" measures instead of masking the results of the teaching-learning process, educators could answer clearly and cogently the desire of the public to know how, what, and why students are being taught within particular public institutions.

Another approach to the problem of evaluating the outcomes of higher education is proposed by C. Robert Pace. He suggests that the value added by higher education be identified in the performance of post graduates. His analysis would require a national, comprehensive, evaluative study of the "total enterprise" of higher education. Dr. Pace specifically refers to a comprehensive study "concerned primarily with a range of outcomes of higher education that may be seen in the behavior of students and adults exposed to the college experience, and with the institutional characteristics and individual experiences that may explain the extent to which different outcomes are achieved."²⁰ Dr. Pace and his associates have devised substantial alumni questionnaires which were administered in the spring of 1969 to alumni from seventy-five colleges and universities with differing institutional settings. The questionnaires contain activity scales devised to "measure the graduate's involvement in contemporary society and culture,"

"measure(s) of awareness about certain major changes that are taking place in American society," and..."measure(s) of attitudes toward such changes."²¹ Most important, however, is a section of the questionnaires which "lists various educational objectives or potential benefits and asks the respondents to rate the extent to which the college experience was influential in relation to those objectives and benefits."²²

A second example in current evaluation research for higher educational use is the National Assessment of Educational Progress, a research project of the Education Commission of the States. National Assessment, as outlined in the article "What is National Assessment?,"²³ is defined as "a plan for a systematic, census-like survey of knowledges, skills, understandings, and attitudes designed to sample four age levels in ten different subject areas."²⁴ The goal of this survey is "to provide information that can be used to improve education at any and all levels where knowledge will be useful, about what students know, what skills they have developed, or what their attitudes are."²⁵ In short, National Assessment is seeking out accurate evidence about what students are learning in schools as "an essential ingredient for wise decision-making in education."²⁶ The National Assessment, while not dealing expressly with given state reports, shows some promise for the development of better measures to indicate the amount of learning students may have acquired prior to college admission.

Assuming that the values of higher education can be identified, is it possible that evidence for their existence can be quantified? Quantitative measures of the "quality" or "excellence" of higher education have been proposed by several researchers. David G. Brown, in his article entitled "A Scheme for Measuring the Output of Higher Education" proposes forty

measures which evaluate a series of five categorical objectives. According to Dr. Brown, "Timely it is for educators to define objectives precisely..., to develop measurement devices..., and to offer a quantitative model for judging the success or failure, the adequacy or inadequacy, of higher education in attaining desired goals."²⁷

Dr. Brown further points out the difficulty involved in obtaining adequate operational measures of objectives for higher education. He writes.

Output choice and measurement choice relates closely. Unfortunately, broad consensus goals are immeasurable, and measurable goals lack general endorsement. The dilemma is arrogance versus imprecision. Avoiding catalog rhetoric and the lofty phraseology of committee reports, this quest is for an operational measure even more than a consensus goal. The technique will be to provide alternative measures for each consensus goal, thereby allowing the model user to employ those measures that are "operational for him" (i.e., he has the data) and "agreeable to him."²⁸

Dr. Brown proposes rather intricately six "characteristics" for all measures: quantifiability, additivity, divisibility, transferability, consensus acceptability, and flexibility.²⁹ He admits that all criteria are difficult to obtain each time, i.e., "...for as a rule consensus measures are not quantitative and additive, and quantifiable goals are not generally accepted."³⁰ He suggests "imperfect proxy" measures be taken then as opposed to "no measures" (subjective judgments).³¹

In another statement, Dr. Brown further adds:

Proxy measures may be grouped as "input," "output," or "value added." One estimate of the quality of an education is the number of courses offered, the education of the teachers, the breadth of course offerings, the dollars spent per student, and the number of volumes in the college's library. The rationale for these input proxies is the very weak assumption the availability and exposure automatically result in learning. Output estimates (e.g., number of earned credits, Graduate Record Examination Scores, percentage going to graduate

school, average starting salary of graduates) rest upon a similarly weak assumption that all growth measured at the end of college is the result of college, or alternately, that all students enter college with the same background and the same potential to learn.³²

Dr. Brown continues to point out the major weaknesses involved in any kind of operational analysis of higher education based upon a quantitative measurement concept. Input and output measurements are not precise enough to measure the "quality" of the educational experience. According to Dr. Brown, however, "the most meaningful proxies measure changes or value added during the college years," and "value-added measures will not always be available but they should be used where possible."³³ In conclusion, Dr. Brown says: "I am proposing a let's-get-started-now scheme for evaluation. The scheme is far from ideal. It will be applied differently by different groups; it measures only change in output and not absolute worth; it relies on untested measures-but it is a start!"³⁴ Dr. Brown thus reiterates throughout his paper that the available quantifiable measures are untested, and at best proxy measurements are available to estimate the "quality" of higher education and its impact on students.

While Dr. Brown proposes measuring the value of higher education by value added concepts, Dr. Alexander W. Astin recognizes the difficulty of creating quantifiable measures to assess the "quality" of higher education. Dr. Astin explores specific problems connected with the development of measures of student outputs.³⁵ His hypothetical model of the relationship among student inputs, the college environment, and student outputs is presented in terms of "those relatively immediate outputs that can be operationalized."³⁶ His measures would include the following ones: "measures

of the student's achievements, knowledge, skills, values, attitudes, aspirations, interests, daily activities, and contributions to society."³⁷

In discussing the kinds of measures to be used to assess student output, Dr. Astin specifically charges investigators to be wary of single measurements. He writes: "Although a single output measure possesses certain obvious advantages because of its conceptual simplicity and computation convenience, it is unrealistic as well as misleading to reduce college impact to a single output measure."³⁸ Dr. Astin assumes that there are many outcomes for students in college, and hence there should be a broad range of outcome measures.

Dr. Astin refers to two types of student outcomes which can be measured. They are cognitive (sometimes called "intellective") and non-cognitive (sometimes called "affective"). Techniques for measuring affective outputs "are not as far advanced as are those for measuring cognitive outputs."³⁹

Dr. Astin's article highlights the current lack of information on cognitive output after college graduation:

It should be pointed out here that psychological measures of cognitive outputs, such as performance on standardized tests, are usually not obtained once a person leaves formal higher education. In fact, the person who holds a college degree normally does not have to take cognitive tests that are otherwise required by the military, industry and the civil service. But there is no reason why cognitive testing could not be used at any time following college, given adequate resources and the subject's willingness to participate.⁴⁰

In short, very little research work has been done in the area of output measurement, according to Dr. Astin. Finally, in designing educational models to account for student input and output, Dr. Astin warns researchers of one of the more "messy" statistical problems:..."the biggest problem in

using student output measures...is posed by the existence of multiple output measures."⁴¹

In an earlier article Dr. Astin investigated the relationship between the "traditional indices of institutional quality and student achievement at colleges."⁴² Among measures he used were "selectivity (an estimate of the average academic ability of the entering students, per-student expenditures for educational and general purposes, number of books in the library, number of books in the library per student, faculty-student ratio, percentage of faculty with Ph.D. degree, etc."⁴³ In the results of his longitudinal study, Dr. Astin found: "Of the student's characteristics at the time he enters college the most important single determinant of his level of achievement as a college senior was his academic ability as measured during high school."⁴⁴ Dr. Astin did find, however, that "the student's achievement is affected by institutional characteristics other than traditional measures of quality."⁴⁵ He suggests more research be done "to isolate these other environmental factors that may affect student achievement."⁴⁶

One other major research effort on quantitative measures of educational quality is the WICHE Management Information Systems Program. Designed by cooperating institutions and agencies in eleven Western states, WICHE has as an objective: "to begin the task of identifying higher institutional input-output indicators, both quantitative and qualitative, and relating varying educational costs to such indicators."⁴⁷ The data information system proposed by WICHE consists of five data dictionaries: staff, students, course, finance and facilities dictionaries. Each dictionary lists

elements of data under each of the latter headings, and these separate elements in turn are housed within computer programs for fast, efficient information retrieval. In terms of student output analysis, the WICHE Management Information System does not currently account for longitudinal studies of graduate performance. It also does not account for student evaluation of courses and faculty at given colleges and universities.

In Objectives and Guidelines of the WICHE Management Information Systems Program, limited reference is made to "identifying and measuring quality."

The WICHE manual reads:

Identifying and measuring the quality of educational outputs is difficult. Agreement on indicators, terms, measures and measuring techniques can only be achieved slowly. But significant efforts have been made and will continue to be made; for example, Cartter's study An Assessment of Quality in Graduate Education.⁴⁸

Thus, the Western Interstate Commission for Higher Education also admits the difficulty of quantifying the "quality" of the higher educational experience.

In conclusion, the WICHE Management Information System is essentially intra-institutional, and does not contain subjective inputs of data from faculty and students. The Brown proposal, however, incorporates subjective data in the form of direct student and faculty testimony obtained by the administration of opinionnaires on all campuses. It would seem possible that the two plans could be combined so as to include the virtues of both.

FOOTNOTES

¹Terry Denny, "Foreword," Review of Educational Research, Vol. 40, No. 2, April, 1970, p. 179.

²Ibid.

³Arthur D. Browne, "Accountability, Productivity Measures Required, Browne Says," cche Newsletter, October, 1970, p. 7.

⁴Robert E. Stake, "Objectives, Priorities, and Other Judgment Data," Review of Educational Research, Vol. 40, No. 2, April, 1970, p. 181.

⁵Ibid.

⁶Ewald B. Nyquist, "Measuring Purposes and Effectiveness," Compact, Vol. 4, No. 5, October, 1970, p. 21.

⁷Ibid.

⁸Marvin C. Alkin, "Evaluation Theory Development," Evaluation Comment, Vol. 2, 1969, p. 2.

⁹Ibid.

¹⁰Ibid.

¹¹Ibid., p. 3.

¹²Ibid.

¹³Ibid.

¹⁴Robert E. Stake, p. 201.

¹⁵Marvin C. Alkin, p. 2.

¹⁶William W. Turnbull, "Dimensions of Quality in Higher Education," Higher Education For Everybody?: Issues and Implications (Washington, D.C., 1970), pp. 35-36.

¹⁷Report of the Commission Tests, I. Righting the Balance (New York, 1970), p. 74.

¹⁸Arthur M. Cohen, Dateline '79: Heretical Concepts for the Community College (Beverly Hills, 1969) p. 71.

¹⁹Ibid., p. 8.

²⁰C. Robert Pace, "An Evaluation of Higher Education: Plans and Perspectives," The Journal of Higher Education, Vol. XL, No. 9, December, 1969, p. 674.

²¹Ibid., pp. 676-677.

²²Ibid.

²³"What Is National Assessment?," Report on the National Assessment of Educational Progress, p. 1.

²⁴Ibid.

²⁵Ibid.

²⁶Ibid., p. 3.

²⁷David G. Brown, "A Scheme for Measuring the Output of Higher Education," in Ben Lawrence's Outputs of Higher Education: Their Identification, Measurement, and Evaluation (Boulder, Colorado, July, 1970), p.27.

²⁸Ibid., p. 28.

²⁹Ibid., pp. 28-29.

³⁰Ibid., p. 29.

³¹Ibid.

³²Ibid.

³³Ibid.

³⁴Ibid., p. 37.

³⁵Alexander W. Astin, "Measuring Student Outputs in Higher Education," in Ben Lawrence's Outputs of Higher Education: Their Identification, Measurement and Evaluation (Boulder, Colorado, July, 1970), pp. 75-83.

³⁶Ibid., p. 75.

³⁷Ibid.

³⁸Ibid., p. 76.

³⁹Ibid., p. 77.

⁴⁰Ibid., p. 79.

⁴¹Ibid., p. 82.

⁴²Alexander W. Astin, "Undergraduate Achievement and Institutional Excellence," Science, Vol. 161, August 16, 1968, pp. 661-668.

⁴³Ibid., pp. 662-663.

⁴⁴Ibid., p. 665.

⁴⁵Ibid., p. 667.

⁴⁶Ibid.

⁴⁷Management Information Systems Program, Western Interstate Commission for Higher Education, Objectives and Guidelines of the WICHE Management Information Systems Program (Boulder, Colorado, May, 1969), p. 1.

⁴⁸Ibid., p. 12.

IV. DECISION-MAKING PROCESSES IN CONNECTICUT PUBLIC HIGHER EDUCATION

Educational decision-makers are seeking honest, viable responses to the issues of public accountability, flagging financial support, and an earlier overreaction to short-term need. They are seeking forthright approaches to the polarization of opinion about the role of the university in a free society ordered by law.

The urgency of our era exhorts higher education to an examination of purposes, priorities, responsibilities and capabilities. Having made a decision to be both responsible and responsive to the needs of society and the individual, the first step toward meeting those obligations is a purposeful allocation of resources. There is no clearer reflection of the values and purposes of an institution than a review of its priorities in allocating resources. Such purposeful allocation will require a careful analysis of the activities, outputs, and objectives of higher education. (From the "Introduction" of Outputs of Higher Education: Their Identification, Measurement, and Evaluation, July, 1970)

In examining the teaching-learning process in the Connecticut system of higher education, the Task Force members wanted to determine the extent of decision-making activities and their bearing on the teaching-learning process. How public higher educational institutions are controlled from within, and to whom they are held accountable from without have been two overriding issues of interest to the Task Force, especially in conjunction with the development of theories and practices of evaluation.

Two terms, internal control, and accountability, need clarification. Internal control refers to the power of educational decision-makers within an institution to guide, regulate and manage it. Accountability refers to the responsibility of the authorities within an institution to report, explain, and justify its goals and actions to the public and others. Accountability, according to Dr. Ewald B. Nyquist, is "the continuous willingness to evaluate education, to explain and interpret the results with all candor

and divulge the results to the public or constituencies that need to know them, and to be personally and organizationally responsible for the weaknesses as well as the strengths revealed."¹ This view, (see Chapter III), closely links the role of evaluator to those of all educational decision-makers. Who exactly does decide policy about higher education in Connecticut? The responsibilities for decisions of policy are outlined in the General Statutes, specifically in Public Acts 530 and 414 of the 1969 Session of the Connecticut General Assembly.

The Connecticut Commission for Higher Education legally mandated by Public Act 330, 1965, Public Act 751, 1967, and Public Act 475, 1967 functions as follows:

Planning and Coordination: Section 3 of Public Act 330 states that the Commission "shall (1) be responsible for coordination of planning for higher education throughout the state, shall encourage the governing boards of the constituent units to initiate necessary plans for development of higher education, and may require any state-supported institution of higher education to submit its plans for development, (2) shall establish an advisory council for higher education with representatives from public and private institutions to study methods and proposals for coordinating efforts of all such institutions in providing a stimulating and enriched educational environment for the citizens of the state, (3) shall conduct research and studies concerning the state's provision of higher education..."

Section 9 of Public Act 751 changed the wording of the earlier act by making the Commission "responsible for planning and the coordination of higher education": instead of the earlier "responsible for coordination of planning for higher education."

A further shift in emphasis occurred in that, instead of the Commission being able to require "any state supported institution of higher education to submit its plans for development," now it can require any of the governing boards of the constituent units of the Connecticut system of public higher education to submit for approval its plans for the expansion and development of institutions within its jurisdiction. The Commission was empowered to encourage the various governing boards "to initiate necessary plans."

Budgetary Review: The Commission is empowered to "make an impartial assessment of the legislative proposals and budgetary requests for higher education and report thereupon to the governor and the general assembly."

Licensing and Accreditation: The Commission "shall be responsible for licensing and accreditation of programs and institutions of higher learning."

Publishing Reports: The Commission "shall prepare and publish annual reports on the condition, progress and needs of higher education in the state, and may publish such other reports and information concerning the higher educational interests of the state as it deems advisable."

Scholarships and Student Financial Assistance: In accordance with Chapter 164, Section 10-116 (1965) of the General Statutes, the Commission for Higher Education renders administrative and clerical service to the State Scholarship Commission in connection with the State Scholarship Program.

Public Act 475 of 1967 gave the Commission coordinating powers in the area of student financial aid. Section 3 of that act states:

The Commission for higher education shall keep a statement of policies and all records of the state scholarship commission. It shall distribute funds, (and) carry out the necessary administrative duties and make such recommendations as it deems appropriate to the state scholarship commission, the Connecticut Student Loan Foundation, and the institutions of higher education within the state to effect maximum coordination of the several programs providing financial support and assistance to students.

Staff Approval: The Commission shall "approve the size of the executive staff and duties, terms and conditions of employment of the executive secretary and executive staff of the constituent units, except as otherwise provided in the general statutes..."²

Areas in which the Commission for Higher Education now functions in an evaluative capacity are budgetary review, licensing and accreditation of programs and institutions. The Commission, however, clearly does not now have power to evaluate all the decisions concerning higher education within the public system. Their chief functions to date have been planning and coordination of higher education throughout the state.

The constituent units - the University of Connecticut, the four state colleges, the four technical colleges, and the ten community colleges - are each governed by separate Boards of Trustees. The Board of Trustees for the State Colleges has the following functions:

Governance: Section 30 of Public Act 330 reads: "Said board of trustees shall administer the state colleges..."

Planning: Section 6 of Public Act 751 states: "Said board of trustees shall administer the state colleges, plan for the expansion and development of the institutions within its jurisdiction, and submit such plans to the commission for higher education for approval."³

The Board of Trustees for the University of Connecticut, the Board of the State Technical Colleges, and the Board of the Regional Community Colleges have similar powers of governing and planning.

Coordination and planning for the needs for the entire system of public higher education are functions of the fifth constituent unit, the Commission for Higher Education.

Each Board of Trustees further delegates authority in order to administer each constituent unit. Each institution has its own president and administration to operate the institution in concert with the faculty. The administrative evaluation of education within each separate institution varies widely and appears to be personal and informal. Accreditation, the certification of an institution by the CHE, primarily a self-evaluation under peer group supervision, appears to be inadequate to the need for more refined and extensive evaluations, according to the Task Force.

Students are evaluated by admission committees of the separate colleges or universities. They are also awarded scholarships according to criteria of organizations or interest groups within or without the institutions. After

a student enters college, he is evaluated largely by the faculty in terms of his academic performance. The common unit of value is the "credit" hour, and this sole measurement is used as the yardstick for achievement purposes.

The Task Force members strongly felt that an institution should assist the student to pursue the following goals:

1. To acquire knowledge (such as concepts, facts and skills)
2. To continue learning
3. To become a useful member of society
4. To serve society and to contribute to constructive social change.

While the first item alludes specifically to cognitive objectives, the others stress the development of the individual as a whole, including his interests, attitudes, appreciations, values and emotional sets.

Nevitt Sanford, in his book Where Colleges Fail, discusses the theory of "education for individual development."⁴ Sanford assumes students do change and develop intellectually and affectively in college and university "settings", and that if universities and colleges subscribe to a student development aim, they must determine ways in which to measure "excellence as a person."⁵ Sanford mentions two ways of determining excellence in the person:

... Of these ways, the more common is to ignore the complexity of what actually occurs during the years at college and to look instead only at the quality of the graduating class. The other way, however, would compare the level of development of entering freshman with that of graduating seniors. By measuring change rather than absolute levels, this second way would reveal how much the college has done, as distinct from whom it was able to recruit.⁶

In line with Sanford's arguments and with the goals listed above, the Task Force members think that the present system of higher education in

Connecticut needs to be reexamined to see if it would be feasible to measure change or "value added" as a student progresses from his freshman to his senior year. In particular, they urge that the outcomes of higher education in terms of the performance of individuals after leaving college be seriously studied by the Commission for Higher Education, working with the individual institutions and with the State Department of Education.

With the delegation of administrative power from the Boards of Trustees to the presidents and faculties of constituent units, a further downward dissemination of educational power occurs. Department chairmen, functioning autonomously or in combination with academic vice presidents and deans, determine professional and student evaluation procedures. Administrative decisions made about assignment, salary, rank, and tenure are often done at the departmental level within most collegiate institutions. The personal and informal evaluations performed in higher education vastly exceed formal evaluation. Decisions are often made with only subjective judgments, even when objective criteria could have been formulated and tested.

One practice which could be used to increase the objectivity of evaluation at the department level would involve the use of course objectives to measure student achievement of specific goals. Often faculty loads are determined on the basis of one variable, the courses to be taught and the sheer number of students to be taught, without much objective insight into teaching techniques and possible academic outcomes with other student-teacher ratios or instructional styles. The assignment of faculty to students in any classroom setting should be a carefully and frequently evaluated procedure.

In a recent article summarizing attitudinal research on both students and faculties concerning the use of behavioral objectives by college teachers,

Arthur M. Cohen reports that at three different junior colleges in Southern California "few of the instructors at any of the colleges are convinced of the utility of objectives. And the majority of instructors at all three schools believe that students look for objectives last."⁷ Entering freshmen at these three junior colleges, on the other hand, were asked "what they look for when they first enter a class," and "they ranked 'Specific learning objectives' first."⁸ Cohen's conclusion about the discrepancy between students' and instructors' views of the teaching-learning process is as follows:

The fact that instructors fail to perceive the usefulness and importance of objectives even in the colleges where they have been writing them for years may relate to their feelings of self-centeredness. A full commitment to the use of objectives demands that the faculty attend to student learning as its prime consideration. It demands a role shift - one which instructors may say they accept but which they cannot abide because it moves the focus of attention away from themselves and opens the door to the possibility that students can learn as well with or without the intervention of the instructor. The idea that the institution should be designed as a place where students obtain specific objectives - that is, change their capabilities and attitudes - and that they, the faculty, are valuable only to the extent they aid the learning process may be too alien to consider. The instructor who is excessively concerned with self cannot open the door to that contingency.⁹

In the light of this research evidence and after looking at several student and alumni opinionnaires and evaluations of college courses, instructors, and general campus atmosphere, the Task Force members recommended strongly that students and alumni be called upon to testify frequently and publicly by means of questionnaires or interviews about the degree of success or failure of the educational process. Such information should serve as direct evaluative feedback to administration and faculty about the quality of the teaching-learning process.

In The Report of the President's Commission on Campus Unrest, the

President's Commission recommends several changes "to improve the climate,¹⁰ quality, and cohesiveness of the university." The President's Commission makes the following suggestion:

Another general way of improving the morale in American colleges and universities is to increase the variety of teaching styles and learning environments. Many students who are capable of taking advantage of the opportunities of higher education are not stimulated, or are even repelled, by the uniform approach to teaching which prevails at many American universities. Such exclusive reliance upon either narrative-memorization styles or abstract conceptual styles may deter many students from learning. Colleges and universities should experiment with, and where feasible, adopt additional styles of teaching and learning. The predominance of departmentalized courses also needs to be reexamined, as does the educational value of heavy reliance upon lectures, examinations, grades, and even degrees.¹¹

In line with the above observation, the President's Commission on Campus Unrest suggested the following general guideline as a reform measure for campus governance: "Increased participation of students, faculty, and staff in the formulation of university policies is desirable."¹² The Task Force concurs with this recommendation.

For the purposes of external accountability, the people who are asking for an evaluation of higher education include the general public, parents, legislators, and students. Parents of students are extremely interested in the rising costs of a college education and the extent to which increasing taxes are required to support spiraling educational costs. Legislators likewise are becoming increasingly insistent on tangible evidence of the value of the higher educational process. Students are critical within colleges and universities about the quality of their individual educational experiences. Accountability of resource allocation must indeed serve all of these constituencies, if it is to be of use in explaining future educational investments.

How can the need for public accountability of higher education be answered by educators today and in the future? The Task Force members, mindful that

evaluation is a subtle and complex matter, propose that higher education must be assessed by qualitative and quantitative measurements, and that if such measurements do not exist now, they must be created.

Accountability requires evaluation, and in turn evaluation requires information. A variety of kinds of economic techniques are available for information gathering and analysis purposes. Such techniques are cost-benefit analysis, cost-effectiveness analysis, PPBS, and social indicator analysis. These techniques, recently created and used by the federal government, are being used essentially to report and measure the resources and activities of colleges and universities in a more systematic and efficient way. In addition, these techniques are used by educational administrators to justify society's investment in human capital. The Task Force members urge that these techniques be used by educators as information sources for accountability purposes, keeping well in mind that they may be of limited utility in measuring the total value of higher education. As pointed out by one theorist, an important qualification must be considered whenever the concept of investment in human capital is discussed; i.e., "there is much more success in identifying and measuring quantitative rather than qualitative differences. Program investments can be assessed on the basis of their quantitative results, but, in practical terms, it is far from simple to develop accurate measurements of the relative quality of education programs."¹³ One summary based upon a survey of scholarly assessments of the theory and practice of cost-benefit techniques as applied to education locates six problem areas for consideration by educational decision-makers. Cost-benefit analysis in education is problematic for the following reasons:

1. Education has hard-to-measure, non-monetary as well as monetary,

objectives and consequences.

2. Education must be weighed against alternative uses of time, e.g., loss of leisure.
3. Education for minority ethnic and racial groups must take into account the higher cost of programs for those with few skills and with other handicaps.
4. Education and economic expansion are closely related. Justification for some educational programs must be sought on non-monetary grounds, e.g., achievement and opportunity, social justice, etc.
5. Completion of years of school is linked to factors other than public investment, including family background, individual ability, motivation, etc.
6. Educational returns are usually calculated on the basis of prior trends, which may not be reliable for predictive purposes.¹⁴

Another promising method for determining how well society is meeting its educational needs is social indicator analysis. A social indicator as defined by Wilbur J. Cohen, former Secretary of the Department of Health, Education and Welfare, is "a statistic of direct normative interest which facilitates concise, comprehensive and balanced judgments about the condition of major aspects of a society."¹⁵ In an article entitled "Education and Learning," he points out the promising features of social indicator analysis as well as the problem of creating adequate performance indices to measure educational progress for society as a whole. At the national level, according to Cohen, "although there is a considerable amount of quantitative data, little of it reveals information about the quality of

the educational system or its products. Practically none of the data measures output of the system in terms of what students have learned, or inputs in terms of how good the teaching is that is provided for students."¹⁶ In conclusion Cohen reveals that such a lack of qualitative data exists in education and that decisions are made on educational needs without corroborating evidence, non-statistical or statistical, at the national level.

In examining the various definitions of the process of evaluation in educational decision-making settings, the Task Force members found frequent evidence that the improvements of evaluations of the teaching-learning process would require the creation of more reliable information sources in order to enable educational decision-makers to assess their programs more objectively. Key to the decision-making process is an information storage and retrieval system created to contain data input from each of the constituent units, government agencies, and higher educational research projects, which in turn would be available to all constituent units for planning, developing and evaluating purposes. Such a system would provide information needed for decision-making at the campus level. One specific information system which the Task Force has studied is the WICHE Management Information Systems Program, previously mentioned at the end of Chapter III. The kinds of basic data housed within such an information system have been examined in detail by the Task Force members and examples of these basic data can be found in Appendix E of this Report.

The Task Force proposes that each collegiate institution in Connecticut must be provided with the computer capacity necessary to develop and to maintain master data files which will provide information for decision-making at the campus level. As the higher education coordinating agency, the Commission for Higher Education should work with the campuses so that comparability of

information exchanged by the institutions is achieved by common definitions of data elements from which all information is retrieved. In the 1967 National Science Foundation Report entitled, Systems for Measuring and Reporting the Resources and Activities of Colleges and Universities, a specific project recommendation from that Report states that "the information systems of all levels of education must be capable of being intermeshed, and that these systems should fit into the totality of the scientific community and other comparable communities since common data on these groups are needed for many purposes."¹⁷ In the same Report, a general discussion about management information systems and their relationship to college and university goals can be found. The thrust of that general discussion emphasizes those particular goals of university operation which are not susceptible to quantification:

...It is one thing to make decisions that are appropriate to improvement of operations, such as registration or classroom assignments. But to make decisions pertinent to advancing learning rates, to dividing time between laboratory and lecture, or to assigning research professors to teach freshman subjects is quite different. Analysis of performance, either to achieve operational improvement or to alter quality of output, depends upon one's concept of the process, of the dominant elements that control the process, and of the standard measurements that can be made. These matters are not yet susceptible to numerical measures.

It is possible to devise an information system that will reduce present operations to better management. It does not necessarily follow that these are the most appropriate operations for the university or that their improved management will achieve what should be the university goals. However, the immediate result will be better organization and control of that now being done, which, of itself, is a necessary and desirable first step.¹⁸

FOOTNOTES

¹Ewald B. Nyquist, "Measuring Purposes and Effectiveness," Compact, Vol. 4, No. 5, October, 1970, p. 21.

²Richard Nelson-Jones, The Coordination and Planning of Public Higher Education in New England (Wellesley, Massachusetts, 1968), pp. 11-12.

³Ibid., p. 15.

⁴Nevitt Sanford, Where Colleges Fail (San Francisco, 1969), p. 9.

⁵Ibid., p. 17.

⁶Ibid., pp. 17-18.

⁷Arthur M. Cohen, "Technology: Thee or Me? Behavioral Objectives and the College Teacher," Educational Technology, Vol. X, No. 11, November, 1970, p. 59.

⁸Ibid., p. 58.

⁹Ibid., pp. 59-60.

¹⁰The President's Commission on Campus Unrest, The Report of the President's Commission on Campus Unrest (New York, 1970), p. 197.

¹¹Ibid., pp. 198-199.

¹²Ibid., p. 203.

¹³Melvin R. Levin and Alan Shank, eds., Educational Investment in an Urban Society (New York, 1970), p. 4.

¹⁴Ibid., pp. 17-18.

¹⁵U.S. Department of Health, Education, and Welfare, "Toward A Social Report," as quoted in Melvin R. Levin's and Alan Shank's Educational Investment in an Urban Society (New York, 1970), p. 344.

¹⁶Wilbur J. Cohen, "Education and Learning," as quoted in Melvin R. Levin's and Alan Shank's Educational Investment in an Urban Society (New York, 1970), pp. 367-368.

¹⁷National Science Foundation, Systems for Measuring and Reporting the Resources and Activities of Colleges and Universities (Washington, D.C., 1967), p. 3.

¹⁸Ibid., p. 247.

APPENDIX A

MEMBERSHIP OF TASK FORCE IV

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APPENDIX B

QUALITATIVE AND QUANTITATIVE PERFORMANCE AND ACHIEVEMENT IN HIGHER EDUCATION: DEFINITIONS AND CHARGES

1. Definitions

The problem to which this Task Force addresses itself is the broad and difficult one of bringing qualitative and philosophical considerations to bear on the definitions, relevance and interpretation of data concerned with the measurement and description of the "output" of higher education. The group can start with the candid admission that there is very little agreement (and less success) with answers to this problem among staff and administration in higher education. Presumably, the group can also start with the general agreement that standard models in the study of economics developed in theories of maximization, minimization, input, value added and output cannot be applied in their present forms to measure directly the "output" of higher education. On the reverse of the coin, however, are the factors which demand that this problem be at least partially solved. Legislators, both state and federal, profess their desire and willingness to vote for the large appropriation for higher education provided that they can be provided with meaningful and relevant information which they can use to justify their belief in the value of the higher education process. The time has arrived when the argument "all education is worthwhile, regardless of cost" is no longer non-debatable. Couple with this concern the increasing cost of supplying more diverse programs to ever increasing enrollments and the importance of the work of this Task Force takes on huge proportions.

2. Charges

A. Category A (Total Charge)

The Task Force should analyze available information and suggest possible methods for achieving the following:

1. Organization among the colleges, independent and public, for the purpose of developing a Management Information System for higher education, accepting as a hypothesis that the design of an MIS has the following priorities:
 - a. The needs of the local campus planners and decision makers at the Board of Trustees level;
 - b. The needs of the Commission for Higher Education;
 - c. The needs of the State agencies and departments;

- d. The needs of the U.S. Office of Education.
- 2. The search for consensus among colleges on answers to such problems as:
 - a. The extent to which higher education results can be identified and measured;
 - b. The comparability of different colleges;
 - c. The possibility of cost analysis in higher education, and, if possible, the effect upon control and institutional autonomy.
- 3. The definition of the concept of quality and the development of meaningful criteria against which the following can be gauged:
 - a. The quality of the faculty;
 - b. The quality of student achievement;
 - c. The quality of an institution.
- 4. The evaluation of the planning process of higher education including that of CHE, the introduction of periodical and critical reviews of progress made under the CHE plan, and the assurance of flexibility necessary for adjustment, and relevance to future developments.
- 3. Category B (Short-Range)

Within the total charge to the Task Force noted above, the following immediate or short-range problems must be considered:

- 1. A general acceptance of the idea that it is valuable to define and measure certain outcomes of higher education process. This acceptance does not imply the rejection of the idea that there are still other aspects of higher education which cannot be quantified;
- 2. The common data elements that all colleges need to define and collect with the justification for each datum;
- 3. A review of the goals of higher education and of the programs to achieve these goals.

Related to the work of this Task Force, but not directly accountable to the task force, will be a study group of operating personnel composed mainly of institutional research staff members, who will investigate the Western Interstate Commission for Higher Education-Management Information System plan in cooperation with the New England Board of Higher Education. This group will study the definition, collection, storage of data elements and proposed methods for

obtaining computer capability which will produce comparable data summaries for analysis of overall data including cost analysis in the higher education system. Included in this study group will be presentation from the Budget Division to coordinate the work of the State-wide program planning budgeting system with the higher education Management Information System.

APPENDIX C

SECTION I - CREATION OF TASK FORCES

The CHE has the need by law and logic for the development of a plan which, subject to annual or systematic modification, could represent at any one instant the synthesis of policy, objectives and the fiscal and physical plans for meeting those objectives. (Robert J. Jeffries, Chairman, Fiscal Policy Committee of the Commission for Higher Education. Statement to Commission, May 7, 1970.)

As a way of implementing quality planning the Fiscal Policy Committee of the Commission for Higher Education recommended establishment of four task forces whose general responsibilities would be:

- (a) identification and collection of pertinent data,
- (b) definition and consideration of alternative proposals, and
- (c) identification of alternatives.

In addition, it was stated that,

Each task force will be encouraged to address itself not only to those specific responsibilities initially assigned to it but also to those which it identifies as a result of its own activity. In a time when higher education programs are being expanded rapidly, and when increasing demands are being placed on our institutions of higher education, a static charge to a task force would be unrealistic and would fail to utilize the anticipated potential of the group.

Membership of each task force was to consist of five to fifteen members to be drawn from higher education (administration, faculty, students), business and commerce, the professions, state agencies and communities. The Commission for Higher Education was to provide staff assistance.

Two basic areas of concern were directed to the attention of each of the Task Forces. These included long-range and short-range matters which were described as follows:

Category A - Long-Range Concerns are related to the sequential development of the State's system of higher education both public and private.

Category B - Short-Range Concerns are related to those items mandated by the 1969 General Assembly which must be completed for presentation at the time of the convening of the 1971 General Assembly. Some studies may also be completed by special committees and in-house activities of the Commission for Higher Education and can be integrated with the pertinent concerns of the task forces.

The four major topics of concern delegated as assignments to each of the task forces were identified as being consistent with the goals of the Commission for Higher Education after consultation with the constituent boards of the higher education system and the Advisory Council of the Commission for Higher Education, representing public and private institutions of higher learning in Connecticut. The areas are I. Needs: Socio-Economic, Manpower, and Regional; II. Function, Scope, and Structure of Higher Education; III. Financing Higher Education, and IV. Qualitative and Quantitative Performance and Achievement in Higher Education.

It is expected that the summer and fall deliberations of the four Task Forces may result in recommendations for Legislative action as well as the identification of possible new directions in Connecticut higher education.

SECTION II - HIGHER EDUCATION IN CONNECTICUT

In 1964, the United States Office of Education, at the request of a commission appointed by the General Assembly, conducted a study of higher education in Connecticut. The recommendations made in that report led in 1965 to the creation of a state system of higher education, a definition of the role of the higher education subsystems including the Commission, the establishment of a Community College system.

The Commission's efforts, since its inception, have been directed toward the significant and orderly development of the system, avoidance of costly and inefficient duplication of programs and coordination in introduction of programs and institutions to serve the needs of the state and its citizens. A major responsibility carried by the Commission is to determine the needs of higher education in the State and how they can best be met through the total higher education system and the subsequent sponsoring of legislative programs and levels of support that will best meet these needs.

Goals for higher education in Connecticut have been identified by the Commission after extensive discussions with the constituent boards of the public higher education system and the Advisory Council. They include the following:

1. To plan for and to coordinate higher education in the state and to stimulate among the constituent units of the public system and the independent colleges, long-range planning which will result in economically efficient and functionally effective programs of education.
2. To define, collect, and analyze data which are related to higher education and carried on by the staff of the colleges and universities in the State; and to report and communicate the aims, needs, and achievements of higher education in the State.

3. To make recommendations which will assist all colleges and universities in the State in obtaining the faculties, facilities, programs, and financial support which they must have to provide quality education.
4. To participate in the development of educational standards and to test college performance in relation to these standards.

The Commission published and distributed general goals defining long-range objectives for public and private higher education institutions in the State. These are:

1. To insure that no student in Connecticut who is qualified or qualifiable and who seeks higher education be denied the opportunity for such education because of his social, ethnic, or economic situation.
2. To protect essential freedoms in the institutions of education.
3. To provide opportunities for a liberal education and for preparing to serve the State's economic, cultural, and educational development.
4. To develop the most effective use of available resources in public and independent institutions of higher education and thus obtain the greatest return on the public investment.
5. To maintain quality standards which will insure a position of national leadership for Connecticut's institutions of higher learning.
6. To assist in bringing the resources of higher education to bear upon the solution or abatement of society's problems.

The Commission for Higher Education is one of the five subsystems in the Connecticut system of public higher education. It acts with Boards of Trustees of the other four subsystems to coordinate planning and to assist in their relationship with agencies whose activities affect higher education. It is the desire of the Commission for Higher Education to achieve the proper balance between institutional autonomy and coordinated operations. Generally speaking the mission of each of the four subsystems can be explained

as follows:

Regional Community Colleges

The present State system consists of 10 community colleges. The first three colleges were founded by the interest and efforts of community leaders. Subsequently Public Act 330 made possible the incorporation of these three colleges into a Regional Community College system and provided for the establishment of additional two year community colleges.

They have a responsibility to offer courses of instruction for academic credit leading to the associate degree. In addition to programs of study for college transfer, this level of instruction includes career oriented programs designed to prepare individuals for the variety of specialized vocations that the growing complexity of Connecticut's economic environment demands. In addition, the responsibility of the Regional Community Colleges extends to the offering of courses of instruction at the transitional level for high school graduates preparing for work at the degree-credit level. Such offerings at the transitional "pre-freshman" level include courses of retraining, continuing education, and community services.

The role of the community college pre-supposes service to a region within commuting distance of its student clientele. Each of the institutions expects to provide facilities to support instructional, cultural and extracurricular programs normally available in a comprehensive college of medium size. Dormitories, however, are not envisioned. (Board of Trustees, 1968.)

Norwalk and Manchester established community colleges without State assistance in 1961 and 1963. Winsted made plans for a community college to open in September of 1965. Following incorporation of these three institutions into the Regional Community College System, guidelines for the further development of a community college system for Connecticut were developed by the Commission for Higher Education when it was established in 1965 by the State Legislature.

Additional colleges added to the system and recommended for approval by the Commission for Higher Education included:

Housatonic Community College Stratford	Licensed 3/1/67 to begin 9/67
Middlesex Community College Middletown	Given independent status 6/1/68
Greater Hartford Community College Hartford	Licensed 5/10/67 to begin 9/68
South Central Community College New Haven	Licensed 5/10/67 to begin 9/68
Mattatuck Community College Waterbury	Licensed 5/10/67 to begin 9/68
Tunxis Community College Bristol - New Britain	Opened in 9/70
Mohegan Community College Norwich - New London	Opened in 9/70

Three additional community colleges, not recommended by either the Board of Trustees for Regional Community Colleges or by the Commission for Higher Education were authorized in the closing days of the 1969 session of the General Assembly. These were:

Northeastern Connecticut	To open after September, 1971
Northern Connecticut	To open after September, 1971
Ansonia - Bridgeport - Derby Region	To open after September, 1973

State Technical Colleges

Four State Technical Colleges were developed in the postwar years. Publicly-supported technical college education in Connecticut dates back to April, 1946, when the Connecticut Engineering Institute was organized in Hartford by the State Board of Education. Inaugurated as a pilot program in response to demands of Connecticut industry, the institute was to help fill

the need for a new type of industrial personnel, the engineering technician. The Connecticut Engineering Institute functioned as a post-secondary institute for several years. Following the success of the program in Hartford, other institutions were founded in Norwalk (1961), Norwich (Thames Valley, 1963), and Waterbury (1964). A fifth institution was authorized by the 1967 Legislature for the greater New Haven area. By legislative action in 1967 (P. A. 751) the name was changed from institute to college, a separate board of trustees was established and the system became a subsystem of the public system of higher education in 1965.

The purpose of these institutes is to prepare those technicians for immediate employment in Connecticut industry who need up to two years of college-level instruction.
(Board of Trustees, 1966)

State Colleges

Four State Colleges were created as normal schools in the years between 1850 and 1903. Degree granting privileges were extended in the 1930's and the names changed to State Teachers Colleges. In the 1960's, the institutions added graduate programs and additional curricula. Subsequently their names were changed to:

Southern Connecticut State College in New Haven

Central Connecticut State College in New Britain

Eastern Connecticut State College in Willimantic

Western Connecticut State College in Danbury

As multi-purpose institutions of higher learning, the State Colleges recognize four interrelated functions: professional education, liberal education, graduate study and research, and public service.

The major emphasis of the colleges is and will continue to be given to the professional preparation of teachers

and other school personnel. Professional offerings have been extended to include education of nurses and the liberal arts and sciences program has increasingly grown in importance offering majors in the areas of the humanities, mathematics, the social sciences, the physical sciences, and the life sciences. (Board of Trustees, 1968)

University of Connecticut

The University of Connecticut was created by the Legislature in April, 1881, as the Storrs Agricultural School. Charles and Augustus Storrs, natives of Mansfield, presented the state with a gift of 170 acres of land and \$6,000. In 1893, the General Assembly renamed the school Storrs Agricultural College and offered admission to women. Three other name changes occurred: Connecticut Agricultural College in 1899, Connecticut State College in 1933 and the University of Connecticut in 1939.

At present the University has five lower division branches in Waterbury (1946), Hartford (1946), Stamford (1951), Torrington (1957) and Groton (1967). The Legislature provided for the expansion of Stamford to a four year college division by September of 1971, although this proposal was opposed by both the University and the Commission for Higher Education. No funds were specifically appropriated for this purpose.

Schools of Law, Social Work and Insurance have been created in Hartford. In 1961, a Medical-Dental School and Health Center were authorized in Farmington. Although the facility is still under construction, the first class of 48 students was admitted in September, 1968. When facilities have been completed, and full classes admitted, 48 doctors and 48 dentists should be graduated annually.

The University of Connecticut is charged with 'exclusive responsibility for programs leading to doctoral degrees and post-baccalaureate professional degrees.' The University must additionally provide undergraduate, pre-professional,

first professional, and Master's degree work consistent with its particular responsibility for advanced graduate study, and such extension and service programs as are appropriate to the training and characters of its staff and to its facilities.

The central point of emphasis of current planning efforts of the University is an institution of highest quality, with an internally complementary graduate and undergraduate program, on a scale that reconciles the requirements of quality with the state's quantitative needs. (Board of Trustees, 1965)

Commission for Higher Education

As the fifth subsystem in Connecticut's system of higher education, the Commission for Higher Education functions to coordinate planning of the other four subsystems and assists in their relationships with agencies whose activities affect higher education.

In carrying out its mandated responsibilities, the Commission for Higher Education attempts: (1) to secure for the State a maximum return on its investment in higher education, (2) to extend higher education opportunity for the State's citizens, (3) to create new resources to meet emerging higher education needs, (4) to provide information and assistance to higher education boards, institutions, and agencies and (5) to create a climate for the orderly development of the State system of higher education.

Under the provisions of Public Act 330, the Commission for Higher Education has 16 members, 12 appointed by the Governor and four appointed by the subsystem boards. Of the 12, one must be a representative of the State's private institutions of higher education.

Members presently serving on the Commission who were appointed by Governor John Dempsey are:

Chairman
Donald H. McGannon, President
Westinghouse Broadcasting Company
90 Park Avenue
New York, N. Y. 10017 (1975)

John J. Driscoll, President
Connecticut State Labor Council
AFL-CIO
9 Washington Avenue
Hamden, Connecticut

The Reverend Edwin Edmonds
Dixwell Avenue Congregational Church
217 Dixwell Avenue
New Haven, Connecticut 06511 (1971)

James F. English, Jr., Chairman
Connecticut Bank & Trust Company
1 Constitution Plaza
Hartford, Connecticut 06115 (1971)

Miss Anne M. Hogan
23 Tatem Street
Putnam, Connecticut 06260 (1975)

Miss Helen M. Hogan
306 Greenbriar Drive
Cheshire, Connecticut 06410 (1973)

Dr. Robert J. Jeffries
The University of Bridgeport
219 Park Avenue
Bridgeport, Connecticut 06602 (1977)

James J. Dutton, Jr., Attorney
22 Shetucket Street
Norwich, Connecticut (1973)

John R. Reitemeyer, Publisher
The Hartford Courant
295 Broad Street
Hartford, Connecticut 06101 (1977)

Orville J. Sweeting
108 Everit Street
New Haven, Connecticut 06511 (1977)

Sister Mary Theodore
Mercyknoll
243 Steele Road
West Hartford, Connecticut 06117 (1977)

Alfred W. Van Sinderen, President
Southern New England Telephone Company
New Haven, Connecticut 06410 (1973)

The four representatives named by the subsystems are:

Merlin D. Bishop
UAW - Sub-Regional Director
100 Constitution Plaza, Suite 500
Hartford, Connecticut 06103
(Rep. Board of Trustees,
University of Connecticut)

Henry E. Fagan
35 York Street
Stratford, Connecticut 06497
(Rep. Board of Trustees for
Regional Community Colleges)

Dr. Margaret Kiely
250 Myrtle Avenue
Bridgeport, Connecticut 06604
(Rep. Board of Trustees, State
Technical Colleges)

Mrs. Bernice Niejadlik
Alexander Lake (Box 304)
Danielson, Connecticut 06239
(Rep. Board of Trustees, State
Colleges)

Alternates named by the institutions:

Alternate for Mr. Bishop
Mr. Joseph R. McCormick, President
The Hartford Electric Light Co.
176 Cumberland Avenue
Wethersfield, Connecticut 06109

Alternate for Dr. Kiely
Mr. Charles Phelps
Hebron Road
Andover, Connecticut

Alternate for Mr. Fagan
Mrs. William Sale Terrell
2801 Albany Avenue
West Hartford, Connecticut 06117

Alternate for Mrs. Niejadlik
Mr. John F. Robinson
The Robinson School
17 Highland Street
West Hartford, Connecticut 06119

Alternate for Mr. Fagan
Mr. Justin Glickson
202 Ponus Avenue
Norwalk, Connecticut 06850

The Commission does not operate the public institutions of higher education. This function is assigned by statute to the various Boards of Trustees. Its responsibilities include a number of major coordinating efforts of which the following are examples:

Budget Planning and Coordination

Public Act 330 requires the governing board of each subsystem to prepare a biennial budget request and to submit it to the Commission for Higher Education, together with such additional information as required. The Commission for Higher Education prepares a consolidated proposed budget for submission to the Governor and the General Assembly. Since the requests of the governing boards of the subsystems are included in the Commission's submission, the Commission's recommendations represent an additional assessment of individual subsystems and total system needs. In the past two biennia, the total amounts recommended by the Commission for Higher Education have fallen between the amounts requested by the subsystems and those appropriated by the General Assembly. The Commission, in both biennia, recommended an amount for

each subsystem which it believed would provide for orderly progress and development, and an increment for improvement of quality as well.

Approval of New Programs

Since 1965, the Commission has been responsible for coordinating planning for higher education throughout the State. The Commission encourages individual governing boards to initiate plans for institutional development. The institutions are required to submit such plans to the Commission for approval. All institutions of higher learning, public and private, have participated in and profited by the many studies of educational needs and existing programs that the Commission and other organizations have made.

Beyond its coordinating role, the Commission is also responsible for accrediting new programs. This activity is carried out in cooperation with the Connecticut Council for Higher Education and serves to insure the public of the quality of the programs offered.

The Commission also has leadership and coordinating responsibilities in programs for student financial assistance, in contracting for spaces for Connecticut residents in independent institutions, and in developing higher education centers.

Independent Institutions

There is also a growing list of areas of cooperation between the State system and the independent colleges. These institutions, while not officially part of the publicly supported State system, enroll a substantial portion of the college students in the State. They are faced with the necessity of planning for the future in a time when public institutions of higher education are undergoing rapid expansion and development. The Commission for Higher Education

provides information to these institutions, involves them in planning activities, and makes every effort to insure that their contribution to the State will be maintained.

The first attempt by the Commission to seek greater utilization in independent colleges resulted in the enactment of P. A. 627 in 1969. This act provides that additional places in independent Connecticut colleges may be provided from public funds through contractual agreements with individual colleges. According to the law, the amount of money per contracted place paid to the independent colleges shall not exceed the cost to Connecticut for educating a student in a comparable program in the public system. The act stipulates that 125% of the current tuition charged by the institution to students, up to the cost per student in State supported institutions, be paid to the college for each additional Connecticut student it admits over a certain base year. The college agrees to use 100% of the tuition to Connecticut students in the form of financial assistance. The remainder may be utilized for its general expenses. The total appropriation made available for 1970-71 was \$1,500,000.

With a grant from the Commission for Higher Education, An Analysis of the Financial Crisis of Private Colleges and Universities was completed in October, 1970 by Ward S. Curran, Associate Professor of Economics and George M. Ferris, Lecturer in Corporate Finance at Trinity College. The report was presented to the Connecticut Conference of Independent Colleges for their consideration, and future developments are anticipated as a result of cooperative efforts between the Commission for Higher Education and the Connecticut Conference of Independent Colleges. A blue ribbon committee has been created by the Commission to provide counsel and advice to the consulting

firm of Arthur D. Little, Inc., of Boston, as that firm studies the State's relationship to the independent colleges and universities within its borders. Efforts to preserve the viability of the private sector of higher education will be continued by the Commission for Higher Education as it recognizes the important contributions of the independent colleges and universities in Connecticut education.

APPENDIX D

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APPENDIX E

WICHE DATA ELEMENTS

STUDENT POTENTIAL

Student Dictionary

- 001 - Student Name
- 002 - Student Number
- 004 - Sex
- 005 - Date of Birth
- 006 - Citizenship Classification
- 007 - Geographic Origin
- 008 - Local Address
- 009 - Permanent Address
- 013 - Race
- 101 - High School Code
- 102 - Year of High School Graduation
- 103 - High School G.P.A.
- 104 - High School Class Rank
- 105 - High School Class Size
- 106 - Entrance Test Scores
- 107 - High School Course Work Summary
- 108 - High School G.P.A. by Major Academic Fields

WICHE DATA ELEMENTS

STUDENT IN

Student Dictionary (Cont.)

- 201 - Admission Action, Original
- 202 - Admission Type, Original
- 203 - Admission Action, Date Original
- 204 - Admission Term, Original
- 205 - Admission Action, Most Recent
- 206 - Admission Type, Most Recent
- 207 - Admission Action Date, Most Recent
- 209 - Registration Type, Current
- 210 - Registration Date, Most Recent
- 211 - Registration Method, Most Recent
- 212 - Student Level, Institutional Standard
- 213 - Student Level, Exchange Standard

NICHE DATA ELEMENTS

PROCESS

Student Dictionary

- 208 - Major Field
- 214 - Credits Earned, Cumulative at Current Institution
- 215 - Credits attempted for Quality Points, Cumulative
at Current Institution
- 216 - Quality Points, Cumulative at Current Institution
- 217 - Undergraduate Credits, Cumulative
- 218 - Graduate Credits, Cumulative
- 301 - Course Identification
- 302 - Course Credit Amount
- 303 - Course Grade
- 304 - Term Identification
- 305 - Course Descriptors

Staff Dictionary

- 001 - Name
- 005 - Sex
- 009 - Citizenship Status
- 101 - Undergraduate Education
- 102 - Graduate Education
- 103 - Highest Academic Degree or Diploma
- 104 - Post Graduate Study
- 105 - Post Doctoral Education

Staff Dictionary (Cont.)

- 106 - Honorary Degrees and Awards
- 107 - Professional Affiliations
- 108 - Licenses, Certifications and Registrations
- 109 - Special Competencies
- 110 - Publication Record
- 111 - Previous Employment
- 112 - First Date of Appointment
- 113 - Separation from Institution
- 201 - Appointment Title
- 202 - Appointment Code
- 203 - Account Number
- 204 - Appointment Percentage
- 205 - Appointment Salary Budgeted
- 206 - Appointment Period
- 207 - Staff Benefits
- 208 - Academic Rank
- 209 - Support Staff Skill Level
- 210 - Tenure Status
- 213 - Appointment Type
- 340 - Course Assignments
- 341 - Instructional Activities
- 342 - Non-Instructional Activities

Finance Dictionary

- 001 - Fund Group
- 002 - Source of Funds

Finance Dictionary (Cont.)

- 003 - Organizational Unit
- 004 - Account Number
- 005 - Program Identification
- 006 - Functional Classification
- 007 - Object Classification
- 008 - Dollar Amount

Facilities Dictionary

- 001 - Facility Number
- 002 - Facility Name
- 004 - Gross Area
- 005 - Net Assignable Area, Facility
- 010 - Initial Capital Investment
- 011 - Additional Capital
- 012 - Estimated Replacement Value
- 013 - Acquisition or Construction Cost
- 014 - Moveable Equipment Cost
- 015 - Site Acquisition and/or Development Costs
- 016 - Facility Ownership
- 017 - Initial Occupancy Date
- 018 - Physical Condition
- 019 - Functional Suitability
- 020 - Facility Location
- 021 - Building Levels
- 101 - Room Number
- 102 - Room Type

Facility Dictionary (Cont.)

- 103 - Net Assignable Area, Room
- 104 - Organizational Unit
- 105 - Program Identification

Course Dictionary

- 001 - Organizational Unit
- 002 - Subject Field
- 003 - REGIS Discipline Division and Specialty
- 004 - Course Number
- 101 - Course Level
- 102 - Course Title
- 103 - Joint Offering
- 104 - Program Identification
- 105 - Credit
- 106 - Credit Base
- 107 - Grading Method
- 108 - Number of Weeks Offered
- 201 - Section Identification
- 301 - Section Instruction Type
- 302 - Weekly Contact Hours
- 303 - Instructor Identification
- 304 - Meeting Days
- 305 - Meeting Time
- 306 - Meeting Place
- 307 - Section Size
- 308 - Special Section Identification
- 309 - Special Facilities Requirements

WICHE DATA ELEMENTS

STUDENT OUT

Student Dictionary

023 - Future Plans, Graduating Student

- a. Intended College
- b. Type of Employment

024 - Future Plans, Nongraduating Student

- a. Transfer to Other College
- b. Withdrawal Reason
- c. Type of Employment

110 - Highest Previous Degree (s), Undergraduate

111 - Highest Previous Degree (s), Graduate

216 - Quality Points, Cumulative at Current Institution

217 - Undergraduate Credits, Cumulative

218 - Graduate Credits, Cumulative

303 - Course Grade

GRADUATE PERFORMANCE

The WICHE dictionary does not include any data which will result in information on graduate performance.